Portage Creek Project

General Wet Dredging Approach

Introduction

EQ has prepared the following General Wet Dredging Approach for contaminated sediment removal in isolated creek sections where the isolation area dewatering approach will not be used.

Operation Approach

Each Slope Area to be addressed is subdivided into multiple sections based on target removal depths determined by prior sample analytical results. EQ will still isolate multiple sections with sheet pile cofferdams up and down stream in a similar manner described in the respective Technical Memorandum for appropriate Slope Area. EQ will provide, install and operate creek by pass pumping systems as described in the respective Technical Memorandum for the appropriate Slope Area.

The Wet Dredging Approach will be conducted as follows:

1. Standing water in the isolated section will remain in place during the contaminated sediment removal process.
2. EQ will utilize a long reach excavator equipped with an RTK-GPS system and a hydraulic clam shell bucket to perform excavation of the isolated area from atop of the creek bank. The RTK-GPS system requires a skilled operator with prior experience in using the system to excavate sediment beneath the water column, and will allow the operator to precisely determine where excavation has taken place to total depth even though turbid water conditions may prevent visual verification. The clam shell bucket allows for removal of sediment without a significant collection of water. Work will begin at the upstream end of the isolated area and progress downstream as sediments are removed to target depth for respective portion of the isolated section.
3. EQ will utilize (2)20 cubic yard (CY) rock boxes to place exhumed material into for solidification and load out. The boxes will be positioned side by side at top of bank downstream from the long reach excavator when working from the west bank and upstream from the excavator when working from the east bank. This will allow for a clear field of view for the long reach operator when swinging the machine to place material in the box(es). A second excavator will be positioned on the opposite end of the boxes to solidify exhumed material and load into transfer trucks to material John Street TCRA Staging Pad. The boxes will be placed on plastic sheeting with sufficient surface area to allow an apron to extend down to the creek's edge. This will permit any water/sediment spillage to gravity flow back into the excavation area, and thus minimize environmental impact to the work bench on top of the creek bank.

4. The long reach excavator will place approximately 10-12 cy of sediment into the box in preparation for latent water extraction and solidification. This will allow for 40-50% freeboard space to allow for addition and mixing of solidification agent.
5. As material is being placed into a box and shortly after, a screened pump hose will be placed into the box to extract latent water recovered with sediment. This water will be pumped into a frac tank for accumulation and settling, and subsequently transferred with a centrifugal pump via constructed pipeline to the waste water treatment plant located at the John Street TCRA Staging Area. EQ may use either a pneumatic powered diaphragm pump, or vacuum pump to recover latent water from 20 cy rock boxes. These pump types are preferred because they do not require priming and several inches of standing water to maintain pumping. A laborer will move the hose end around in the box as needed to recover the maximum amount of water available prior to adding a solidification agent.
6. Solidification with the second excavator will begin once a box is filled and latent water is evacuated. EQ will use either Calciment/Corn Cob based Sorbant media or ~~/~~desicant based polymer to absorb water saturated within the sediment. Material will be provided in cubic yard super sacks that will be staged near the solidification area. The second excavator will lift a super sack of solidification material and dispense material through a bottom chute into the rock box. The chute opening will be positioned just above the sediment in the box to minimize media fall distance and thus minimize dust release into the atmosphere. Water mist spraying may need to be performed on windy days as a dust control measure. This will be performed by the same laborer performing latent water evacuation using either a pressure washer, or garden hose spray nozzle with the booster pump from a clean water tank staged close to the work area. The operator will mix material thoroughly until no sign of free water is present.
7. A fork truck or rubber tire loader with forks may be used to bring additional solidification media from a remote storage area to supplement material staged close to mixing and solidification operations.
8. Solidified material will be loaded into dump trucks in manner as previously described in respective Technical Memorandum and sent to the John Street TCRA Staging Area.